

Bird Observations from
Atkinson Point,
Northwest Territories, 1984

Bradley D. Arner,
D. Lynne Dickson,
and Guy Verreault



CANADIAN WILDLIFE SERVICE —

BIRD OBSERVATIONS FROM ATKINSON POINT,
NORTHWEST TERRITORIES, 1984

Bradley D. Arner,
D. Lynne Dickson,
and
Guy Verreault

CANADIAN WILDLIFE SERVICE

Edmonton, Alberta

September, 1985

ABSTRACT

While studying red-throated loons in June, 1984, additional information was collected on other bird species at Atkinson Point, NWT. Coastal areas of the Beaufort Sea are known to support staging, feeding and breeding habitat for many species of water birds. The coastal areas are also active centres for hydrocarbon exploration.

Daily totals were kept for all bird species observed. Nesting information was gathered on species, location, clutch size, and nest site description. Weather data and the timing of melt of ice and snow were also recorded.

Fifty species of birds were observed, of which nests were found for 20 and another eight were suspected of breeding. Known breeding ranges of tree swallow (Tachycineta bicolor) and barn swallow (Hirundo rustica) were extended. A northern-most sighting of common merganser (Mergus merganser) was also recorded. There were eight new breeding records and five new sightings for Atkinson Point.

The most common nesting species were red-throated loon (Gavia stellata), brant (Branta bernicla), glaucous gull (Larus hyperboreus), and lapland longspur (Calcarius lapponicus). Nesting water birds were found in higher densities in drained lake basins than in other wetland tundra habitats.

TABLE OF CONTENTS

	Page
ABSTRACT	i
LIST OF FIGURES	iii
LIST OF TABLES	iv
ACKNOWLEDGEMENTS	v
1.0 INTRODUCTION	1
2.0 STUDY AREA	3
2.1 Physiography	3
2.2 Climate	4
2.3 Vegetation	4
3.0 METHODS	6
4.0 RESULTS AND DISCUSSION	7
4.1 Species Accounts	13
5.0 LITERATURE CITED	34

LIST OF FIGURES

	Page
Figure 1. Map of the study area	2
Figure 2. Loon nest locations	14
Figure 3. Waterfowl nest locations	16
Figure 4. Larid and hawk nest locations	23
Figure 5. Shorebird and crane nest locations	25
Figure 6. Passerine nest locations	31

LIST OF TABLES

	Page
Table 1. Daily bird counts at Atkinson Point, NWT, June, 1984..	8
Table 2. Number of nests and estimated initiation dates for birds breeding at Atkinson Point, NWT, June, 1984.....	10

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the following persons for their contribution to the study: Gerry Aiudi who assisted with the field work, Tom and Sam Barry for volunteering their knowledge of the area, Kevin McCormick, Kathy Dickson and Roger Edwards who edited the manuscript, Susan Popowich who drafted the figures, and Heather Breen who typed the manuscript.

1.0 INTRODUCTION

Atkinson Point is an active centre for hydrocarbon exploration in the Beaufort Sea (Fig. 1). In 1980, Dome Petroleum Ltd. constructed a mooring basin and an artificial island in McKinley Bay to winter drill ships and to store supplies and equipment. Atkinson Point has been used for staging winter drilling operations and fuel caching. A Distant Early Warning (DEW line) station was in operation at Atkinson Point from 1952 to 1964, and a manned navigation station (DECCA) was present from the 1960s to 1978. The abandoned DEW line buildings and airstrip are presently used for herding domestic reindeer, during their annual tagging and antler removal.

Several aerial and ground surveys of birds have been conducted in the Atkinson Point area as a result of the hydrocarbon exploration activities and their associated environmental risks. These studies have shown that moulting sea ducks especially oldsquaw, scaup, and scoters frequent the waters of McKinley Bay (Ward 1981; Karasiuk and Boothroyd 1982; Cornish and Allen 1983; Cornish and Dickson 1984). Adjacent lagoons and tidal flats are feeding and staging grounds for tundra swans and brant (Cornish and Allen 1983; Cornish and Dickson 1984; and T. Barry pers. comm.). As of 1983, 64 species had been observed at Atkinson Point or the adjacent waters of McKinley Bay. Evidence of breeding at Atkinson Point had been found for 25 species (Kevan 1970), the most common being brant, glaucous gull, and lapland longspurs.

While studying red-throated loons at Atkinson Point (Dickson in prep.) ancillary information was collected on other bird species. This paper summarizes our additional observations of birds occurring on Atkinson Point.

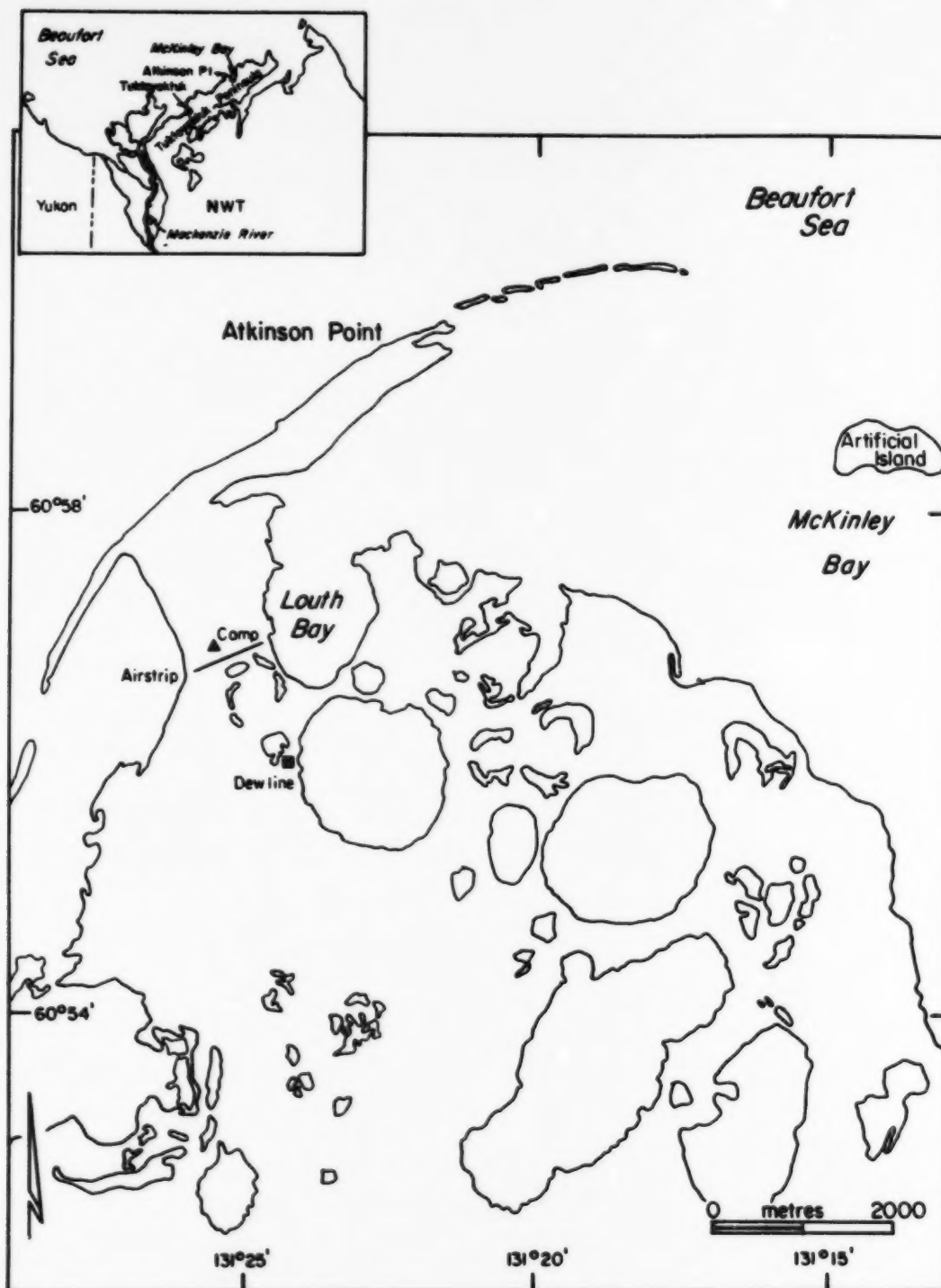


Figure 1. Map of the study area.

2.0 STUDY AREA

Atkinson Point (69°56'N, 131°25'W) lies on the southeast coast of the Beaufort Sea on the Tuktoyaktuk Peninsula, 83 kilometres from the hamlet of Tuktoyaktuk (Fig. 1). The study area includes the sand spit at Atkinson Point and all land, lakes and ponds up to seven kilometres inland from the Beaufort Sea for a total area of approximately 42 square kilometres.

2.1 Physiography

The study area lies within the Mackenzie Delta district of the Arctic Coastal Plain physiographic region which is typified by the delta of the present river as well as remnants of earlier deltas. The delta plain is remarkable for its multitude of lakes, river channels and scores of pingos (Bostock 1970).

Elevations in the study area range from sea level at coastal lagoons to 10 m a few kilometres inland. The consistently flat terrain is dotted with thermokarst lakes, ponds and patterned ground (high and low-centred polygons). The natural evolution of low-centred polygons through freeze and thaw action (Bergman et al. 1977) has produced a massive network of ponds which cover the western portion of the study area.

Drained lake basins are numerous along the sea coast. These lake basins were formed when channels were eroded into the sea, lowering the water level and allowing sedges and other emergent vegetation to take hold.

Surficial materials which include silts, sands, and gravels are underlain by permafrost (Bostock 1970).

2.2 Climate

There is no climatic data from Atkinson Point; however, certain inferences can be drawn from Tuktoyaktuk climatic data.

The area experiences a Marine Tundra climate (Burns 1974) with short cool summers and long cold winters. The mean daily temperature at Tuktoyaktuk during January is -28°C and 10°C in July (Atm. Env. Serv. 1982a).

Small water bodies are ice-free by early June and large lakes by the first of July. In fall, freeze-up begins on smaller ponds by mid-September and continues on larger lakes into October (S. Barry pers. comm.). Snow storms and temporary freeze-overs can occur at any time during the brief summer months.

The mean annual precipitation is approximately 138 mm, which includes a mean annual snowfall of 65 cm (Atm. Env. Serv. 1982b).

2.3 Vegetation

The vegetation which is considered wetland tundra is typical of the low arctic communities. The uniformly flat ground is poorly drained and transitional development from one community to another is a reflection of moisture gradients. The following vegetation communities were present.

- The sandy spit at Atkinson Point which is periodically washed by storm tides was barren of plant life.

- Tidal flats of graminoids (Puccinellia phryganodes) and sedges (Carex sp.) existed along the normal high tide line in Louth Bay and lagoons along the sea coast.
- Drained lake basins contained complex pond systems of Carex aquatilis and Arctophyla fulva with willows (Salix sp.) and other sedges in seasonally flooded ground.
- Low-centre polygons were the dominant physiographic feature which influenced vegetation in the eastern half of the study area. The raised rims were peaty and supported dwarf birch-heath-lichen vegetation, whereas their centres contained Carex and Eriophorum species. The pond network in the western part of the study area had distinct borders with little emergent vegetation and were separated by dwarf birch-heath-lichen vegetation.
- High-centre polygons were well drained and supported willows and heath (Ericaceae sp.) (Kevan 1970). Dwarf birch (Betula glandulosa) and willow reached their maximum height in the protected crevices between these polygons.
- On high ground and slopes were found tussocks of Eriophorum vaginatum, dwarf shrubs and ericaceous species (Lambert n.d.).

3.0 METHODS

While searching for red-throated loon nesting territories, ancillary information was gathered on other species in the study area. Two observers conducted ground searches from 1600 h to 0200 h each day from 1 to 20 June, 1984. When nests were found, species, location, date, number of adults, number of eggs or young, nest site description and other comments were recorded daily. Due to our emphasis on wetlands used by red-throated loons, coverage of the area was not systematic.

Nest initiation dates were either direct observations, or back dated from observations of laying or from time of hatch. Date of first hatch was taken from either direct observations or calculated from initiation dates using known incubation times from other arctic areas (Bellrose 1976; Godfrey 1966). Nest measurements were taken on the outside diameter and the rim height.

Weather data were collected each day at 1600 h on temperature, wind speed, wind direction, % cloud cover, and precipitation. Data on the timing of melt were collected at the same time. Water levels were measured daily at four stations depicting a marsh, small pond, large pond and lake.

4.0 RESULTS AND DISCUSSION

Fifty species of birds were observed during this study (Table 1). The Canada goose, northern shoveler, common merganser, common snipe, and tree swallow are new sightings for Atkinson Point. This brings the total number of species sighted from all studies at Atkinson Point to 68 (Kevan 1970; Karasiuk and Boothroyd 1982; Allen 1982; Cornish and Allen 1983; Cornish and Dickson 1984). Nests were found for 20 species (Table 2), and eight other species are suspected of nesting. New breeding records for Atkinson Point from this study are green-winged teal, greater scaup, rough-legged hawk, sandhill crane, common snipe, parasitic jaeger, tree swallow, and savannah sparrow. This is a northern breeding extension for the tree swallow (Godfrey 1966) and confirmation of an earlier breeding record for the barn swallow (Allen 1982). Evidence of breeding from all studies has now been found for 32 species. Species which other studies have reported as either nesting or suspected nesting are willow ptarmigan, semipalmated plover, black-bellied plover and Baird's sandpiper.

The sighting of a common merganser is a northern range extension for this species. Godfrey (1966), and Bellrose (1976), limit common mergansers to the southern Mackenzie Valley.

Water birds were by far the most numerous which exemplifies the wetland habitat found at Atkinson Point. Fifteen of the twenty species found nesting, and 81% of all nests were those of water birds. The large lakes and adjacent waters of McKinley Bay are also used by moulting waterfowl.

Table 1. Daily bird counts at Atkinson Point, NWT, June, 1984.

Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Red-throated Loon	4	2	7	7	18	21	23	25	17	11	18	15	20	14	13	16	13	16	17	13
Arctic Loon				1	4	2	4	2	4	3	6	6	9	2	11	7	2	2	1	5
Tundra Swan	6	6	3	3	7	7	9	10	7	9	9	13	8	5	6	4	3	6	13	4
Greater White-fronted Goose	35	30	30	175	45	27	36	45	18	16	18	19	16	12	30	18	8	8	10	7
Snow Goose	1	1	3	26	4		30		1	1	8		4	4						
Brant	20	13	28	1650	63	6	615	400	65	35	68	55	53	15	43	40	16	23	13	18
Canada Goose										2										
Green-winged Teal				1	1		5		1	2	4	1	1	1			1	2	1	1
Mallard							3					1								
Northern Pintail	20	16	36	55	32	33	80	50	33	25	25	23	38	50	55	40	13	8	14	11
Northern Shoveler							2			1	1									
American Wigeon					1		10													
Greater Scaup							4		4	7	2	4	3	1	3	1				1
Common Elder									4	4										
King Elder							2			1										
Oldsquaw	5	11	41	59	43	30	41	40	21	15	15	16	18	9	9	12	6	9	11	17
Surf Scoter									25	25	25	33	33	25	25	25	17	18	16	15
White-winged Scoter												4	3	28	10	28	8	28	25	5
Common Merganser							3					1	7	30	18	178	5	33	40	5
Red-breasted Merganser					1															
Northern Harrier							1										2			5
Rough-legged Hawk	1				1	1														
Rock Ptarmigan	3	5	5	9	6	7	10	10	8	6	6	2			1					
Sandhill Crane	3	4	4	5	4	6	6	6	6	4	5	4	7	3	6	5	4	4	3	3
Lesser Golden Plover													4		4	5	2	4	5	4
Lesser Yellowlegs	2	5	5	3	4	4	4	4		3	3	3	6	3	4	4	2	3	2	4
Ruddy Turnstone				1																

Table 1. Continued.

Species	Day in June																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Semipalmated Sandpiper	25	23	28	33	25	23	23	30	20	15	12	15	15	14	13	16	10	10	12	13
Pectoral Sandpiper		2	2	24	21	11	15	30	16	6	10	8	12	6	9	11	6	9	11	6
Stilt Sandpiper		6	10	13	16	7	6	20	12	6	7	7	5	1	4	7	3	4	5	3
Long-billed Dowitcher	2	2		1		1	1	1	1	3	1	1	1	1	1					
Common Scribe																				
Red-necked Phalarope		2		1	7	4	24	30	35	25	23	23	20	11	20	23	16	14	11	19
Red Phalarope																				2
Russet-backed Jaeger				3	1	2	6	6	5	6	2	2	1	1	1	1	1			
Parasitic Jaeger	10	18	12	7	6	4	4	6	1		4	2	2	3	3	2	2	2	1	5
Long-tailed Jaeger		10	2	6	1	4	6	4	1	1	1	3	1			1		1		
Glaucous Gull	15	38	24	28	46	28	40	75	55	33	65	60	65	8	15	63	13	14	21	35
Sabine's Gull			4	4	8	3	10	10	8	2	7	4	1	3	3	3	1	1		2
Arctic Tern				1	4	3	11	6	8	3	8	5	4	7	6	5	2	2	1	3
Snowy Owl	1	2	2	3	9	6	14	6	6	4	3	4	3	2	2	2	1	2	1	2
Short-eared Owl				2	2	2	1			1	1	1		1	1					1
Horned Lark		1	1	1	1		1													
Tree Swallow	2					1	2		2	2	2	2	2	2	2	2	2	2	2	2
Barn Swallow	2																			
Common Raven					1		1				1	1		1			1			1
Savannah Sparrow				1	8	8	11	20	13	11	11	10	11	7	6	4	4	5	5	6
Lapland Longspur	50	63	75	80	63	63	63	75	63	60	63	58	53	35	48	53	45	45	38	45
Snow Bunting	5	8	7	7	10	10	13	20	4	3	3	6	5		5	3	2	1	2	3
Redpoll sp.	5	13	6	9	14	9	15	30	11	5	6	30	11	41	10	3	3	5	6	7
TOTAL INDIVIDUALS	214	278	344	2231	489	350	1167	975	473	355	445	450	442	348	388	584	212	285	288	274
TOTAL SPECIES	19	23	23	31	35	31	40	28	30	35	35	37	33	34	32	31	30	32	28	34

Table 2. Number of nests, clutch size and estimated initiation dates for birds breeding at Atkinson Point, June, 1984.

Species	Total nests recorded	Average No.* of eggs	Range	N	Estimated initiation date
Red-throated Loon	34	1.8	0-2	11	June 14
Arctic Loon	3	1.0	0-2	3	June 14
Tundra Swan	4	3.7	3-4	3	before June 1
Greater White-fronted Goose	6	5.0	2-7	6	June 4
Brant	65	2.6	2-4	13	June 8
Green-winged Teal	1	5.0	-	1	mid-June
Greater Scaup	2	5.0	4-6	2	mid-June
King Eider	3	5.0	4-6	2	June 15
Oldsquaw	3	3.0	2-4	3	June 10
Rough-legged Hawk	3	3.5	3-4	2	before June 1
Sandhill Crane	4	2.0	-	4	before June 1
Semipalmated Sandpiper	3	4.0	-	3	first week of June
Pectoral Sandpiper	3	4.0	-	3	first week of June
Red-necked Phalarope	4	3.5	3-4	2	June 10
Parasitic Jaeger	2	1.5	1-2	2	June 8
Glaucous Gull	37	2.7	2-3	6	first week of June
Tree Swallow	1	unknown	-	-	June 10
Savannah Sparrow	2	4.5	4-5	2	June 8
Lapland Longspur	34	4.9	2-6	34	June 1
Snow Bunting	1	unknown	-	-	June 12
TOTAL NUMBER OF NESTS	215				

*The number of eggs recorded is not necessarily representative of completed clutches.

Our study period did not encompass the entire migration period, however, it did coincide with the migratory movements of some species. The progression of melt along the Tuktoyaktuk Peninsula appeared to be one or two weeks earlier than normal (T. Barry pers. comm.) and resulted in a less intense migration.

Ponds were ice free on June 5 and open leads were present in McKinley Bay June 15. On June 1, the ground was 50% snow covered, but with warm temperatures (4-11°C) and rain, there was less than 5% snow cover by June 6. The rapid melt and runoff provided large areas of standing water and overflow. This period of warm weather and rapid melt coincided with increased display behaviour and bird movement.

Our study methods may have affected our observations. The area travelled on a particular day influenced the number of birds observed since coastal areas were more productive than inland areas. This may account for some of the day-to-day fluctuations in our records (for example, brant). However, the daily records do provide information on arrival dates and movement through the area (Table 1).

Since our method for collecting nest records was random and non-quantitative, the absolute density of nesting birds cannot be calculated. We can, however, use the density of nesting we found to illustrate the relative number of nests in one part of the study area compared to another.

It was evident while conducting the study that drained lake basins characterized by numerous shallow ponds with emergent sedge were far more productive than other areas. The density of nests in the four

lake basins combined was 26.8 nests/km², compared to the overall nest density for the study area of 5.1 nests/km². One lake basin on the east side of the study area covered only three percent of the study area but contained 26 percent of all nests with a minimum nest density of 40.7 nests/km². Brant and glaucous gull colonies, and red-throated loon nests accounted for 63 percent of all nests and these species showed a preference for lake basins. Use of lake basins is likely due to the abundance of water and suitable nesting islands, as well as their proximity to coastal feeding areas.

Bergman et al. (1977) also found lake basins to be important breeding areas for water birds at Storkersen Point, Alaska. Although our study does not provide data comparable to their arctic communities, it is apparent that drained lake basins are important habitat for water birds breeding in the Beaufort Sea region and warrant further study.

Colonial nest sites of brant and glaucous gull which we found on the east side of the study area and at the DEW line site were also reported by Kevan (1970) and Dickson (pers. comm.). The small lake at the DEW line site has been known as a traditional nest site for brant by local residents (W. Nasogaliak pers. comm.).

Three of the four glaucous gull colonies were associated with brant colonies. The association between nesting larids and waterfowl have also been documented by Vermeer 1968; Dwernychuk and Boag 1972; and Trauger and Bromley 1976. These authors reported nesting of gulls and waterfowl within close proximity to each other and that gull predation had a significant impact on the survival of waterfowl young. Although

it is common to find brant nesting in association with glaucous gulls in the Canadian arctic (T. Barry pers. comm.), little is known about this relationship and the impact on brant productivity.

4.1 Species Accounts

Red-throated Loon - Gavia stellata

Red-throated loons were observed flying in from the Beaufort Sea upon our arrival on June 1; open water was visible from the air approximately 8 km offshore. On June 5, a group of 15 were loafing in a narrow shorelead off the Atkinson Point sand spit. Loons initiated territorial and courtship behaviour once there was sufficient open water inland. Numbers peaked on June 8 when a daily total of 25 birds were sighted. The first nest was constructed on June 13 and one egg was present on June 14. Several pairs defended territories well into June, but did not nest. In total, 37 nests were found in the study area (Fig. 2). On several occasions, territories contained a nest and one or more platforms which are thought to be for copulating or from previous years (Palmer 1976). Vegetation from the pond bottom was used to construct a circular mound, usually on islands or at the pond edge within 1 m of the water. Measured nests had an outside diameter of 25 to 40 cm (N = 11). Some nests with eggs were low enough to have water in them. The estimated date of first hatch is July 10.

Arctic Loon - Gavia arctica

The first sighting was on June 4 and a peak of 11 occurred on June 15. However, numbers were fairly consistent throughout the study

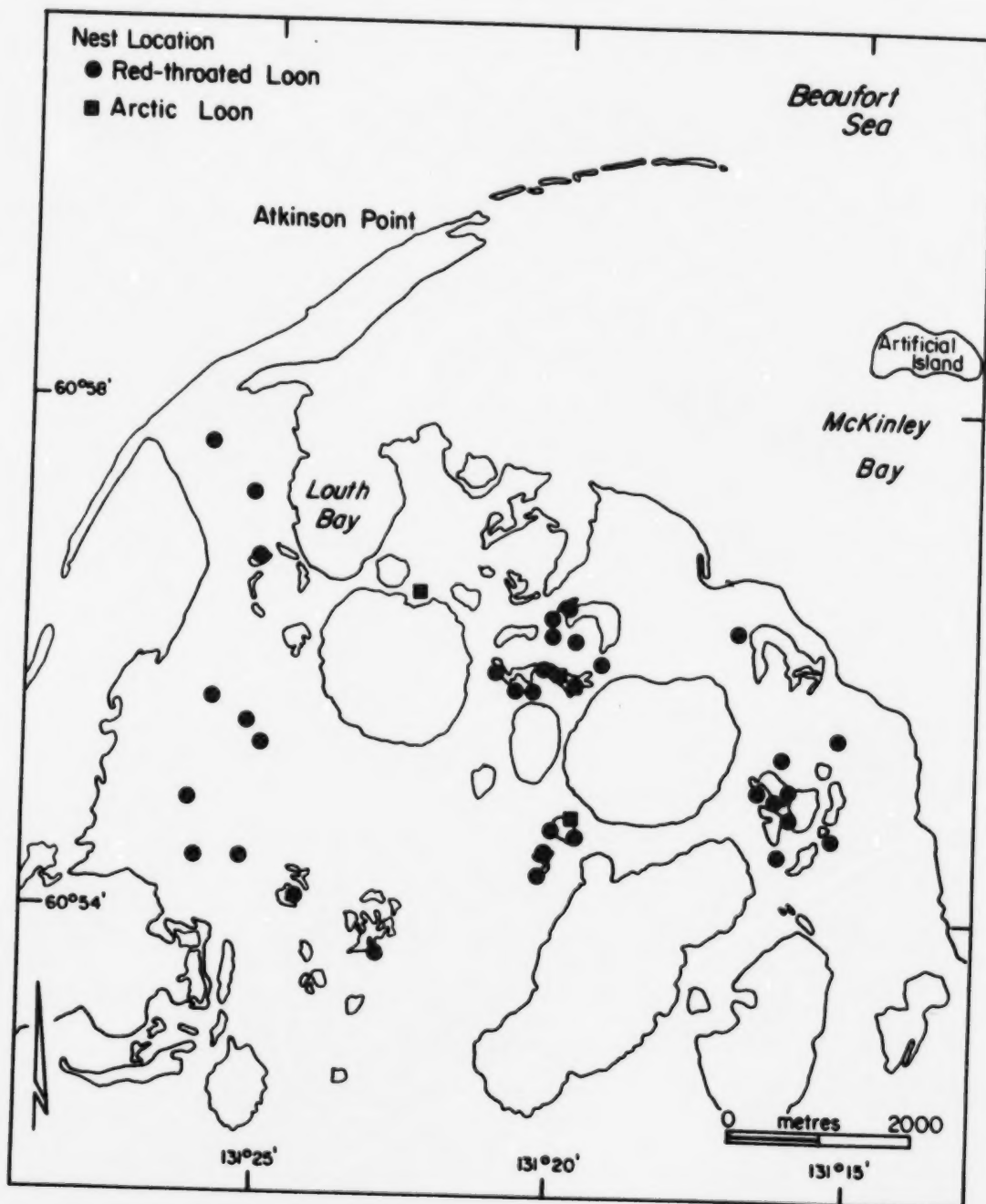


Figure 2. Loon nest locations.

period. Their preference for large ponds delayed their appearance inland as compared to red-throated loons; one egg was found on June 17 and a second egg in the same clutch on June 20. Nests were very similar in construction to those of red-throated loons. One nest was in a small shallow pond completely filled with emergent vegetation and approximately 50 m from a small lake. In total, three nests were found. Another three pairs were seen defending territories, but no search was conducted for their nests (Fig. 2). The estimated date of first hatch based on the June 17 laying date was July 12. These loons were much less vocal and more secretive than red-throated loons. Unlike other areas where arctic and red-throated loons are solitary nesters, a pond in one of our lake basins harboured one arctic and two red-throated loon nests.

Tundra Swan - Cygnus columbianus

Nesting swans were present on June 1, and numbers remained constant throughout the study. Groups of three to five non-breeders were occasionally observed. Five nests were found (including one outside the study area), of which three were visited (Fig. 3). One nest contained two eggs on June 2 and three eggs on June 9. This nest was later robbed of one egg by an arctic fox. The nests consisted of large mounds of fine dry plant material and down, and were found adjacent to large ponds or lakes, usually on a hummock, high-centre polygon or slope. One nest measured 1 m across and 25 cm high. No young had hatched by June 20.

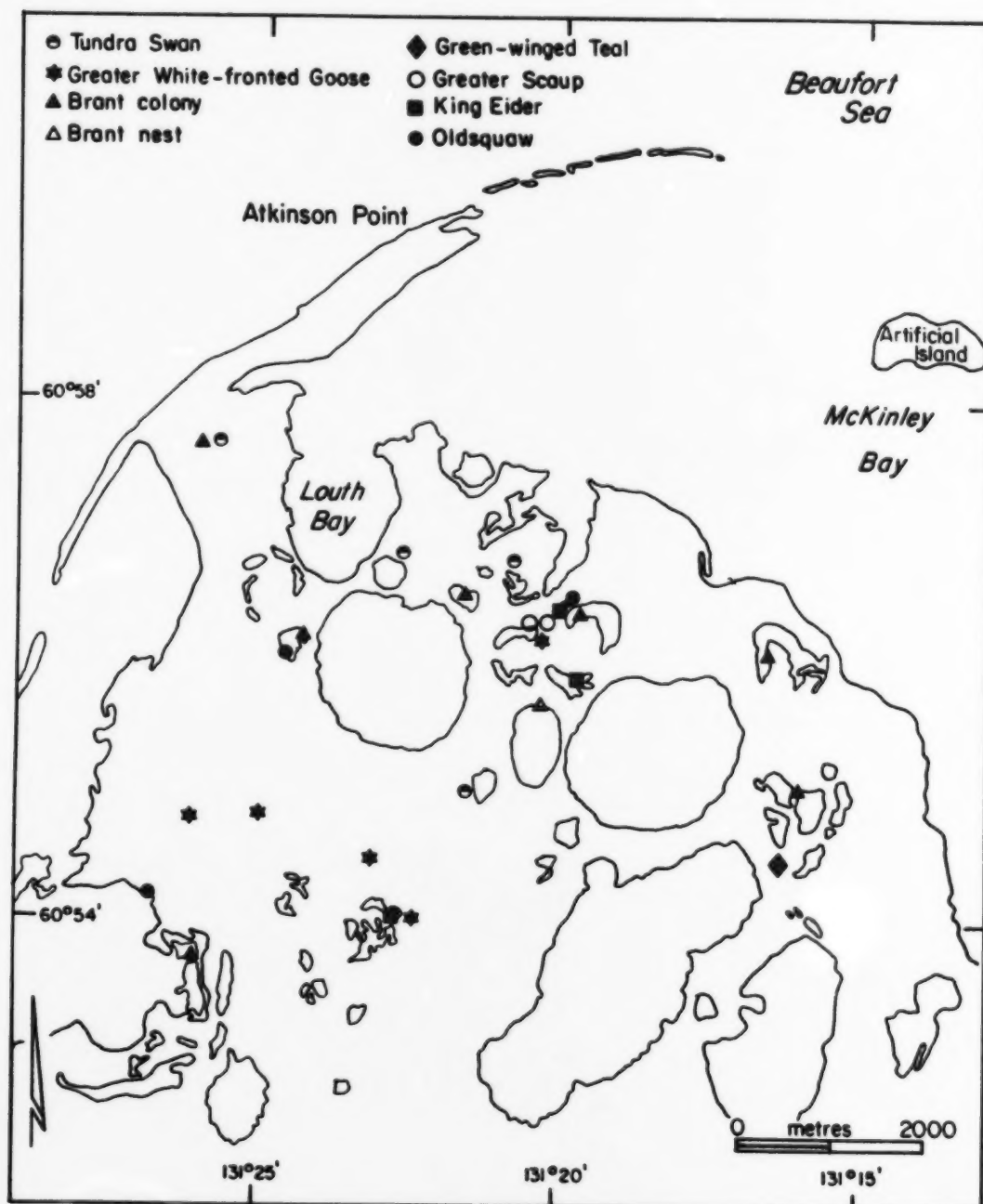


Figure 3. Waterfowl nest locations.

Greater White-fronted Goose - Anser albifrons

These geese were present on June 1 and a peak of 175 was recorded on June 4. The first nest was found on June 6 and contained two eggs. The initiation date was estimated to be June 4. Six completed nests had clutches of three to seven eggs (Fig. 3). The nests were located within 3 m of ponds in both lake basins and low-centre polygons. They were constructed of fine grasses and sedges and contained some down. One nest measured 35 cm across by 12 cm high. No young were observed at Atkinson Point; however, downy young were observed on June 25 at Toker Point 65 km to the southwest.

A snowy owl was found feeding on an adult greater white-fronted goose carcass on June 6.

Snow Goose - Chen caerulescens

Small numbers of lesser snow geese were regularly observed until June 14. There was no obvious influx and most were seen mixed with large flocks of brant. The majority of snow geese had probably passed through prior to June 1. There was no evidence of nesting in the study area.

Brant - Branta bernicla

Small numbers of brant were present on June 1. Two major influxes of 1650 and 615 birds occurred on June 4 and 7 respectively. These birds grazed and rested on the tidal flats of McKinley Bay. Migrant brant followed the coast, moving in a northeast direction. Six

brant colonies and two lone nests, totalling 65 nests were found (Fig. 3). Two of these colonies were in association with glaucous gull colonies. Species often shared the same islands and in one case occurred within 1 m of each other. The preferred nest sites were on islands in lake basins, tidal lagoons or rarely on pond edges. All nests had ready access to tidal flats. Nests were open depressions or built up with fine grass, measuring 30 to 50 cm across and 10 to 25 cm deep (N = 13). All nests were well insulated with thick grey down. Completed clutches consistently contained two to four eggs. There were no young present on June 20, however, based on the initiation date, the estimated date of first hatch was July 2.

Canada Goose - Branta canadensis

Canada geese were observed on June 10 only. Most that migrate through our area likely passed prior to June 1. There was no evidence of nesting in the study area.

Green-winged Teal - Anas crecca

This species was first noted on June 5, and was frequently observed in small numbers throughout the study period. While visiting the area on July 21, a female was flushed from a nest with five eggs (Fig. 3). The nest was concealed under dwarf birch and willows on the south slope of a high-centre polygon and was approximately 300 m from the nearest body of water.

Mallard - Anas platyrhynchos

Mallards were first recorded on June 7 and only once thereafter. There was no evidence of nesting.

Northern Pintail - Anas acuta

Pintails were present on June 1 and the maximum (80) was reached June 7, although at least 11 birds were seen each day throughout the study period. Male pintails were observed pursuing females early in June and later, several pairs were seen loafing. We suspected they were breeders, although no nests were found. Groups of 10 to 20 males were frequently seen in tidal lagoons and large inland ponds. Migration appeared to be in a northeast direction.

Northern Shoveler - Anas clypeata

These birds were first noted June 7 and only twice thereafter. They were associated with groups of other dabbling ducks, and there was no evidence of breeding.

American Wigeon - Anas americana

One bird was sighted on June 5 and another 10 were observed on June 7. These birds were migrants and there was no evidence of breeding.

Greater Scaup - Aythya marila

Greater scaup were first noted on June 7 and regularly thereafter in low numbers. A female was flushed from a nest with six eggs on

June 16. The clutch consisted of four large pale green eggs and two small white eggs. This nest could possibly have been parasitized by another species of waterfowl or the difference in eggs may have been due to the poor nutritional state of the female (B. Bromley pers. comm.). A second nest with four eggs was found on June 20 (Fig. 3). It is not known if these nests were complete. Based on arrival dates and sightings of groups of males, an approximate nest initiation date is mid-June. No young were found by June 20.

Common Eider - Somateria mollissima

Small numbers of males and females were sighted on June 8, 9 and 10. Common Eiders were not suspected of nesting in the study area.

King Eider - Somateria spectabilis

This species was first noted on June 3 and daily thereafter with numbers ranging from six to 21. Lone pairs were seen on June 6 and groups of three to six males were regularly seen pursuing females. After June 13, they were always seen as lone pairs loafing in small ponds. The first nest was found on June 19 and contained four eggs. Two pairs were seen copulating on June 20. While visiting the study area on July 13, a nest with six eggs was found in a lake basin and on July 17, 11 young and two females were observed in the same lake basin. This was interpreted as a total of three nests (Fig. 3) although there were likely more nests in the study area. The nest initiation date was approximately June 15 and date of first hatch was estimated to be

July 9. The two nests were depressions lined with grass and dark grey down. Nests were on shore within 5 m of a pond in either a lake basin or patterned ground.

Oldsquaw - Clangula hyemalis

Five oldsquaw were observed on June 1, and the maximum number (58) was recorded on June 4, when mixed groups of males and females were sighted migrating northeast along the coast. Male birds started displaying and became vocal on June 5; lone pairs were also observed at this time. Display behaviour had ceased by June 13 (Fig. 3). A nest was found on June 9 and the first egg was laid on June 10. A second nest with two eggs was found on June 13. The first nest was constructed of grass and was located on an island near the DEW line site. The second nest was in a very open area on a gravel beach 10 m above the high tide line and was constructed of small driftwood and down. A female and three young, one to two weeks old (based on age classification developed by Gollop and Marshall 1954), were on the study area July 24.

Surf Scoter - Melanitta perspicillata

Surf scoters were first seen on June 12. Flocks consisting predominantly of males were seen with white-winged scoters loafing in large lakes and moving through the area in a northeast direction. There was no evidence of nesting.

White-winged Scoter - Melanitta fusca

This species was first noted on June 7 and a major influx occurred on June 16 when a flock of 178 birds (predominantly males) was recorded on a large lake on the east side of the study area. There was no evidence of nesting.

Common Merganser - Mergus merganser

A single sighting was made of a common merganser flying over the north end of the study area on June 5. This was the first sighting of a common merganser in the Beaufort Sea region.

Red-breasted Merganser - Mergus serrator

On June 18 and 20, small groups of two to five red-breasted mergansers were seen flying along the coast. No evidence of nesting was found.

Northern Harrier - Circus cyaneus

A lone bird was observed for 20 minutes as it followed an arctic fox. The fox was travelling along a ridge of high ground and the harrier would fly and land within 3 m of the fox. This behaviour continued until the animals were out of sight.

Rough-legged Hawk - Buteo lagopus

A lone bird was observed on June 2 and intermittently thereafter. A nest with three eggs was found on a hummock in tussocky tundra on

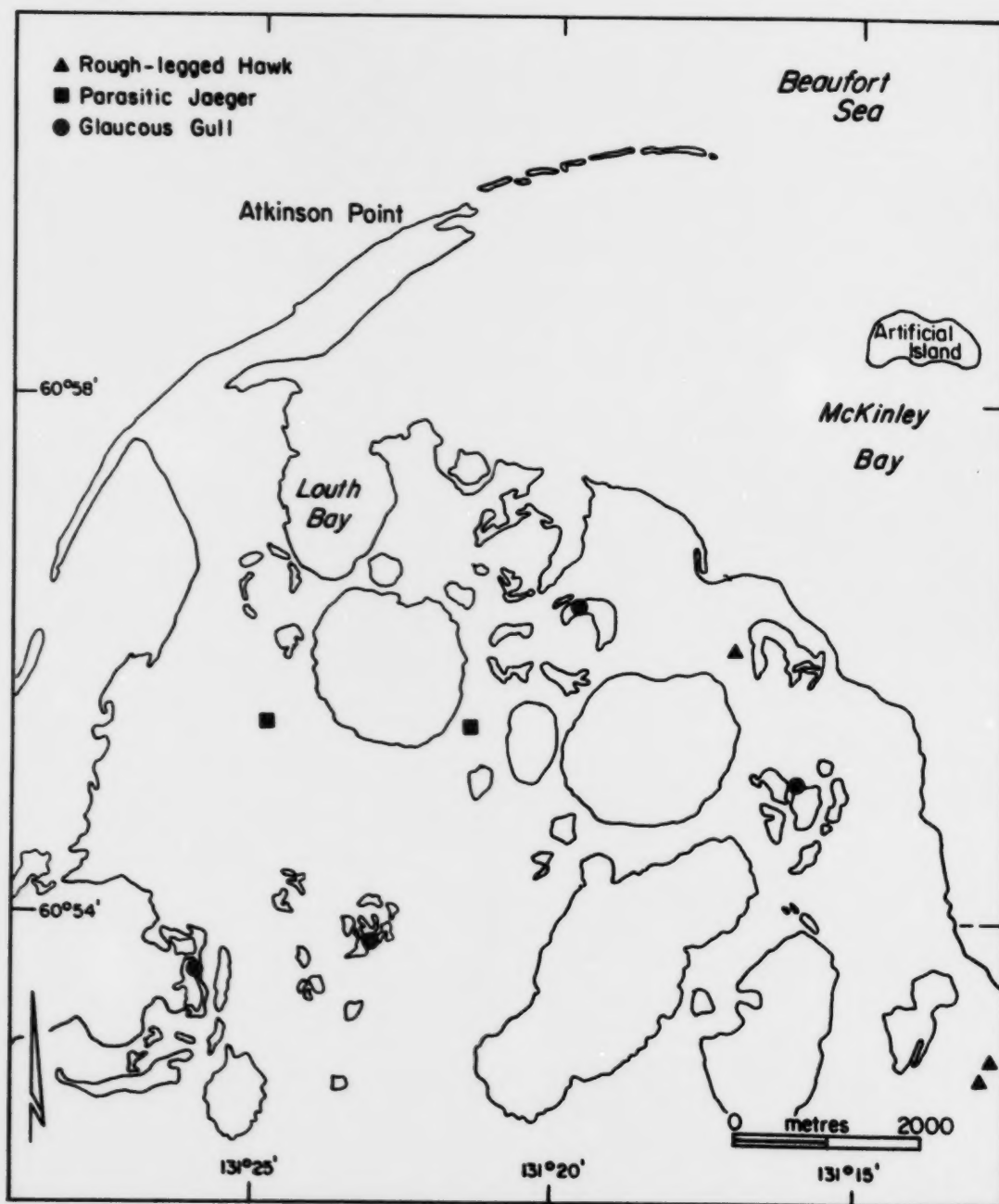


Figure 4. Larid and hawk nest locations.

June 5. The nest was built of sticks, lined with feathers and was likely initiated prior to June 1. Two other nests built of sticks were found on June 26, 3 km south of the study area and 300 m from McKinley Bay. One of these nests was on a hummock and contained four young of different sizes. The other nest was on a 15 m high navigation tower, but the contents of this nest are not known (Fig. 4). All three nests were each attended by two adults. Both light and intermediate colour phases were observed.

Rock Ptarmigan - Lagopus mutus

All-white male and moulting female birds were present on our arrival and were common throughout the study period. Male birds were chasing each other and displaying most intensely during the second week of June. By the third week of June, paired birds were common and easily sighted as the male would sit on the nearest hummock or high point with the female close by. By June 20, females had attained full summer plumage and males had just started to moult. Although no nests were found, courting behaviour and the presence of numerous lone pairs strongly indicated that nesting took place. Although Godfrey (1966) lists the Tuktoyaktuk Peninsula in the breeding range, it is the first recorded evidence of breeding rock ptarmigan at Atkinson Point. It is also of interest that we did not observe willow ptarmigan when previous studies found them to be the most numerous and the wetland habitat would seem to favour them (Kevan 1970).

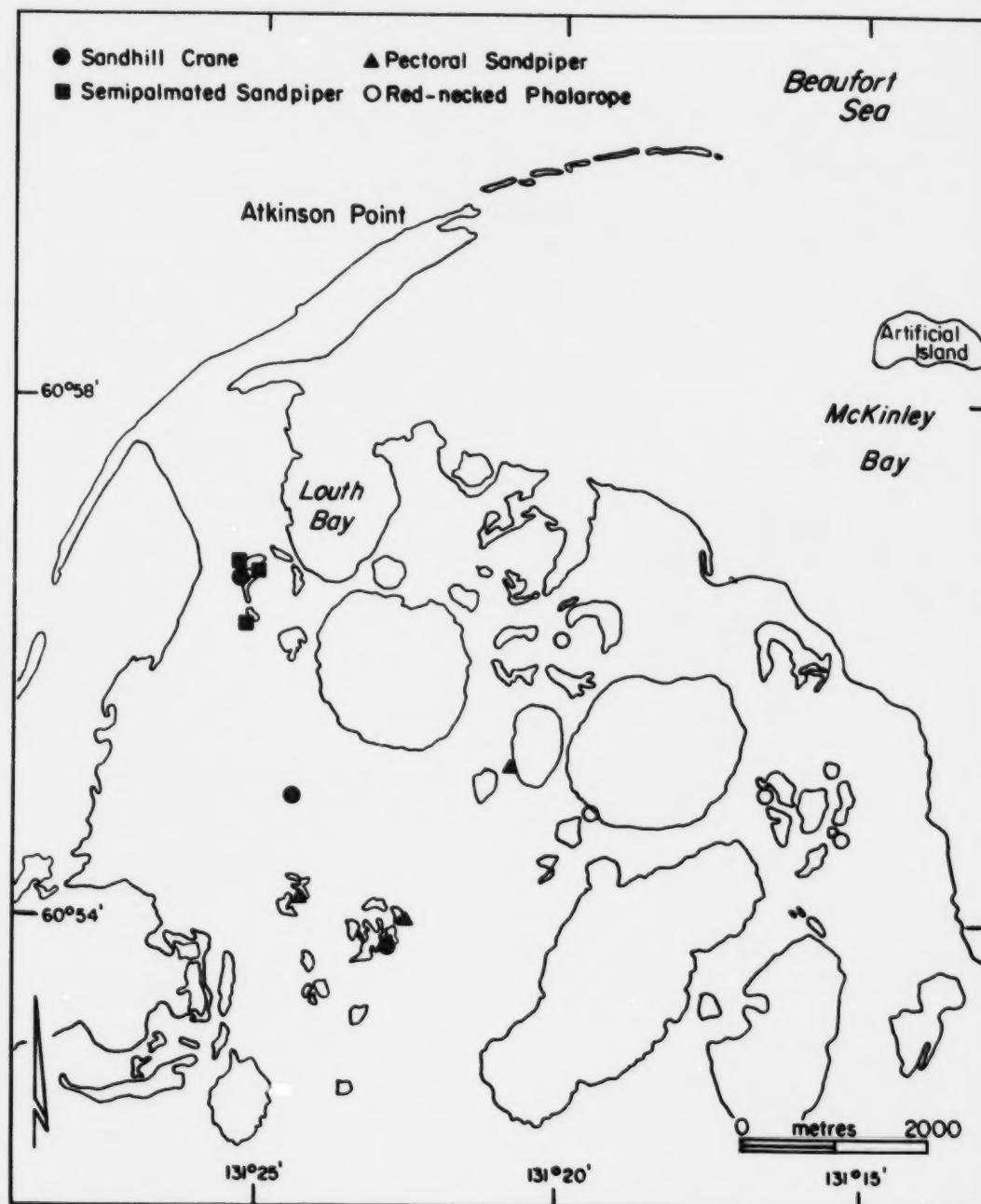


Figure 5. Shorebird and crane nest locations.

Sandhill Crane - Grus canadensis

Nesting pairs were present on June 1 and throughout the study period. A nest with one egg was found near the airstrip, on June 1. It contained two eggs a day later. The following day, both adults and eggs were gone and the nest had been disturbed. A total of three nests were found. All completed nests contained two eggs (Fig. 5). Nests were constructed of small sticks and grasses and were feather lined. All nests were on a high point of land surrounded by a wet area. Nests measured 20 to 50 cm across and 7 to 8 cm deep. A downy young, approximately 80 cm tall was observed on July 24.

Lesser Golden Plover - Pluvialis dominica

These birds were regularly seen throughout the study period in pairs or as lone birds. There was no evidence of nesting.

Lesser Yellowlegs - Tringa flavipes

One individual was sighted on a pond edge near the airstrip on June 4.

Ruddy Turnstone - Arenaria interpres

One individual was sighted on June 5.

Semipalmated Sandpiper - Calidris pusilla

These birds were present in fairly high numbers on June 1. Courtship flights were regularly seen throughout the study area until

June 11. The first nest was found on June 11 and contained four eggs. In total, three nests were found; all contained four eggs which is thought to be the complete clutch size (Fig. 5). Nests were located on exposed high-centre polygons 5 to 10 m from water and were shallow depressions lined with fine grass. One female when flushed from the nest, puffed its feathers and gave a broken wing display. No young birds were seen by June 20.

Pectoral Sandpiper - Calidris melanotos

This species was first noted on June 2, and numbers increased until June 8. Aerial display began on June 5 and ceased on June 15. Three nests were found, the first on June 10 (Fig. 5). All nests contained four eggs and were thought to be complete. Nests were shallow depressions concealed in grass or tussocks on patterned ground. Females did the broken wing display when disturbed. No young were seen prior to June 20.

Stilt Sandpiper - Calidris himantopus

Stilt sandpipers were first noted on June 2 and were regularly seen throughout the study period. A peak of 20 birds was recorded on June 8. Aerial courtship was regularly seen, however, no nests were found. This species is likely to have nested during the study period.

Long-billed Dowitcher - Limnodromus scolopaceus

Occasional sightings occurred throughout the study period, however, no evidence of nesting was found.

Common Snipe -- Gallinago gallinago

Lone birds were observed and were heard winnowing over lake basins throughout the study period. Based on observations of aerial display, common snipes were likely nesting.

Red-necked Phalarope - Phalaropus lobatus

The first bird was sighted on June 2 and a peak of 35 was reached on June 9. The first nest was found on June 12 and contained four eggs. A total of four nests were found (Fig. 5). The nests were constructed of fine grass approximately 7 cm across and concealed in vegetation at the waters edge. Nests were located at flooded marshes of lake basins. On June 16, two eggs thought to be that of red-necked phalarope were found floating in a pond near a previously located nest. One adult with two downy young was seen on July 7 and a second adult with four young was seen on July 17.

Red-Phalarope - Phalaropus fulicaria

Pairs were sighted on June 11 and occasionally thereafter. A pair was observed copulating on June 12, but no nest was found.

Pomarine Jaeger - Stercorarius pomarinus

Small bands of migrant birds moved northeast through the study area between June 4 and 17.

Parasitic Jaeger - Stercorarius parasiticus

Flocks of up to 12 birds were moving northeast through the study area during the first week of June. Only nesting birds remained by the end of the study period. The first nest was found on June 9. At that time it contained one egg, but later had two. The initiation date was approximately June 8. A second nest with two eggs was found on June 18 (Fig. 4). Nests were solitary, open depressions on the rims of low-centre polygons. One nest measured 15 cm in diameter by 5 cm deep. Adult birds were very defensive towards intruders. Young were not observed prior to June 20. This was the most common jaeger on the study area and both dark and light colour phase birds were seen.

Long-tailed Jaeger - Stercorarius longicaudus

This species was most common during the first week of June, moving northeast in small groups.

Glaucous Gull - Larus hyperboreus

These gulls were present on June 1, with numbers increasing to 75 on June 8. Nest initiation was approximately the first week of June. Adults were seen at colony sites June 3 and the first nest was found June 8. Four colonies ranging in size from three to 20 nests (total of 37 nests) were located within the study area (Fig. 4). All complete clutches contained two or three eggs. All nests were on islands in large ponds or lagoons. Islands were often barren mounds of peat, and the nests were open depressions, occasionally of grass and sedge. Nesting brant were closely associated with three of the four gull colonies. No young were recorded prior to June 20.

Sabine's Gull - Xema sabini

Sabine's gulls were first noted on June 3 and were regularly seen throughout the study period. A pair was observed copulating near the DEW line site on June 11. Other pairs were thought to have nested in lake basins on the study area. Two sabine's gulls were observed feeding along with two red-necked phalaropes on the tidal flats. The gulls were stirring up the bottom in a manner identical to the phalaropes, presumably feeding on invertebrates.

Arctic Tern - Sterna paradisaea

This species was common in low numbers throughout the study period. A pair was observed copulating on an island near the DEW line site on June 11. Pairs were also observed carrying fish and defending ponds against our approach. Although no nests were found, we suspect that more than one pair nested on the study area.

Snowy Owl - Nyctea scandiaca

Snowy owls were present on June 1. An obvious movement through our area occurred between June 5 and 9 as five to 14 of these owls were observed daily in the small area between the airstrip and Atkinson Point. Although they were present throughout the study period, no evidence of nesting was found.

Short-eared Owl - Asio flammeus

This species of owl was first noted on June 4. One or two individuals were occasionally seen flying low over the study area during the rest of the study period.

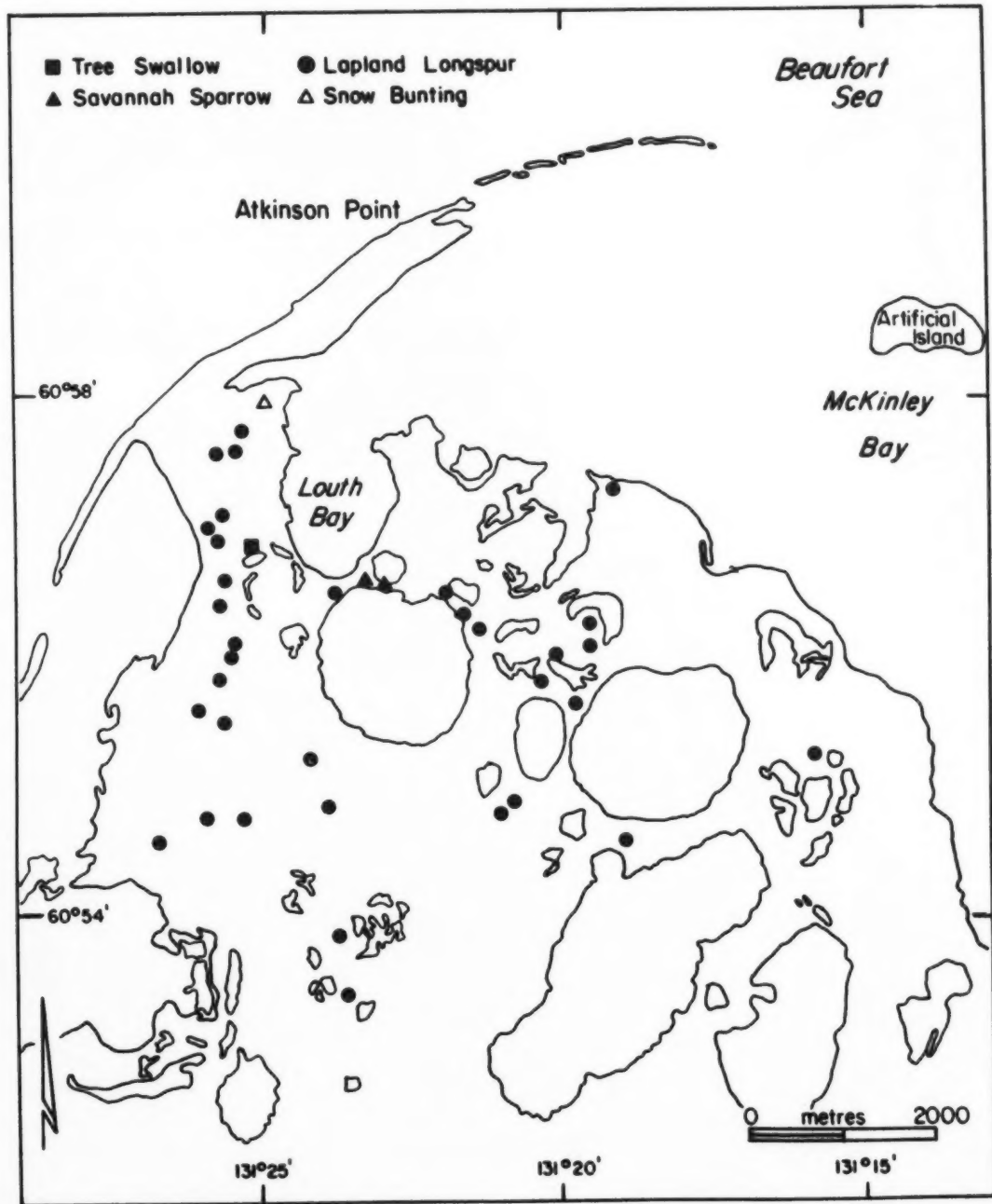


Figure 6. Passerine nest locations.

Horned Lark - Eremophila alpestris

Lone birds were observed from June 2 to 7.

Tree Swallow - Tachycineta bicolor

A pair was present at our campsite along the airstrip on June 1 (Fig. 6). On June 12, this pair was carrying nest material into the end of a steel pipe 3 m above ground. They are thought to have started laying about June 15. The contents of the nest were not known. During a brief stop in August, we found that the pipe had been dislodged and the adult birds were not present. This is the first sighting of tree swallows at Atkinson Point and the first record of nesting on the Tuktoyaktuk Peninsula.

Barn Swallow - Hirundo rustica

On June 8, a pair was observed flying to and from an abandoned shack near our camp. The birds were not seen again, however, three mud nests, typical of barn swallows were found inside an abandoned building.

Common Raven - Corvus corax

Lone birds were infrequently seen flying over the study area.

Savannah Sparrow - Passerculus sandwichensis

This species was first noted on June 4 with a maximum of 20 being seen on June 8. On June 9, a female was flushed from a nest containing two eggs and on June 13 it contained five eggs. Both nests were

partially concealed in tussocks and were constructed of fine grass. The nest initiation date is estimated to be June 8. No young were noted prior to June 20.

Lapland Longspur - Calcarius lapponicus

This was the most common species on the study area. Male courtship flight was in progress on June 1 and several pairs were observed copulating and carrying nest material on June 6. The first nest was found on June 5, and it contained five eggs. The date of first initiation was estimated as June 1. Overall, 34 nests were found (Fig. 6). Clutch sizes were consistently four to six eggs. Their grass and feather nests were concealed under grass and shrubs at the base of tussocks, usually with a southern exposure. A nest with four young was found on June 18. By the end of the study period, male longspurs rarely displayed and only females were found at nest sites.

Snow Bunting - Plectrophenax nivalis

Common in low numbers throughout the study period. On June 12, a pair was observed constructing a nest in the brain cavity of a beluga whale skull which had been washed inland past the normal storm tide line (Fig. 6). The female was the active nest builder, while the male remained 2 to 3 m distant. The contents of the nest are not known.

Redpoll - Carduelis sp.

Redpolls were present on June 1 and regularly seen throughout the study period with a peak of 30 on June 8. The majority of sightings

were of small groups moving through the study area. All individuals were not identified to species, but most were common redpolls (C. flammea). We found no evidence of nesting.

Although this study did not provide a comprehensive investigation into bird use at Atkinson Point, it has provided additional information on the species present, and their relative abundance. Coastal wetland tundra in the Beaufort Sea region provides nesting and staging habitat for many species of migratory birds (Owens 1974; Bergman et al. 1977; Salter et al. 1980). In view of future land based hydrocarbon exploration and production facilities, the identification and protection of water bird habitat should be encouraged.

5.0 LITERATURE CITED

- Allen, D.L. 1982. Terrestrial Bird Surveys, McKinley Bay, NWT, 1982. Unpubl. Data, Can. Wildl. Serv., Edmonton. 12 pp.
- Atmospheric Environment Service. 1982a. Canadian climate normals, 1951-1980. Vol. 2 - Temperature. Downsview, Ontario. 306 pp.
- Atmospheric Environment Service. 1982b. Canadian climate normals, 1951-1980. Vol. 3 - Precipitation. Downsview, Ontario. 620 pp.
- Bellrose, F.C. 1976. Ducks, Geese and Swans of North America. Stackpole Books, Harrisburg, Pa. 544 pp.
- Bergman, B.D., R.L. Howard, K.F. Abraham and M.W. Weller. 1977. Water birds and their wetland resources in relation to oil development at Storkersen Point, Alaska. Unpubl. Rept., U.S. Fish and Wildl. Serv., Washington, D.C. 38 pp.
- Bostock, H.S. 1970. Physiographic subdivisions of Canada. Pp. 11-30 In: R.J.W. Douglas (ed.). Geology and Economic Minerals of Canada. Econ. Geol. Rept. No. 1, Geol. Surv. Can., Ottawa.
- Burns, B.M. 1974. The climate of the Mackenzie Valley - Beaufort Sea. Volume II. Unpubl. Rept., Env. Can., Toronto. 239 pp.
- Cornish, B.J. and D.L. Allen. 1983. Water bird surveys of McKinley Bay, NWT, 1982. Unpubl. Rept., Can. Wildl. Serv., Edmonton. 105 pp.
- Cornish, B.J. and D.L. Dickson 1984. Water bird surveys of McKinley Bay, NWT, 1983. Unpubl. Rept., Can. Wildl. Serv., Edmonton. 64 pp.

- Dwernychuk, L.W. and D.A. Boag. 1972. Ducks nesting in association with gulls - an ecological trap? Can. J. Zool. 50:559-563.
- Godfrey, W.E. 1966. The birds of Canada. Bull. No. 203, Biol. Ser. No. 73, Nat. Mus. Can., Ottawa. 428 pp.
- Gollop, J.B. and W.H. Marshall. 1954. A guide for aging duck broods in the field. Miss. Flyway Council. Tech. Sect. 14 pp.
- Karasiuk, D.J. and P.N. Boothroyd. 1982. Preliminary environmental assessment of proposed harbour sites at McKinley Bay and Baillie Islands, NWT. Unpubl. Rept., Can. Wildl. Serv., Yellowknife. 46 pp.
- Kevan, C.L. 1970. Birds of the Tuktoyaktuk Peninsula. Unpubl. Rept. for the Can. Wildl. Serv., Edmonton. 31 pp.
- Lambert, J.D.H. No Date. Vegetation patterns in the Mackenzie Delta area, NWT. Unpubl. Rept., Dept. of Biol., Carleton University, Ottawa. 18 pp.
- Owens, R.A. 1974. Environmental Program, Mackenzie Delta, NWT, Canada. Volume 4, Birds, Appendix 4-14. Report by F.F. Slaney and Co. Ltd., for Imperial Oil Ltd., Gulf Oil Canada Ltd., Shell Canada Ltd., and Canadian Arctic Gas Study Ltd.
- Palmer, R.S. (ed.). 1976. Handbook of North American Birds. Volume 1, Loons through Flamingos. Vail-Ballou Press Inc., Binghamton, N.Y. 467 pp.
- Salter, R.E., M.A. Gollop, S.R. Johnson, W.R. Koski and C.E. Tull. 1980. Distribution and abundance of birds on the Arctic coastal plain of northern Yukon and adjacent NWT, 1971-76. Can. Field-Nat. 94(3):219-238.

Trauger, D.L. and R.G. Bromley. 1976. Additional bird observations on the West Mirage Islands, Great Slave Lake, NWT. Can. Field-Nat. 90(2):144-148.

Vermeer, K. 1968. Ecological aspects of ducks nesting in high densities among larids. Wilson Bull. 80:78-83.

Ward, J.G. 1981. Wildlife observations during dredging operations in McKinley Bay, July-August 1980. Unpubl. Rept., Dome Petr. Ltd., Calgary. 57 pp.